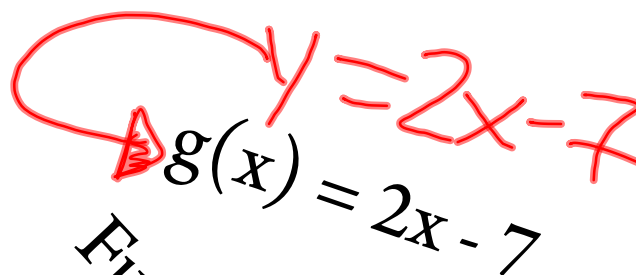


4.8 Functions & Relations



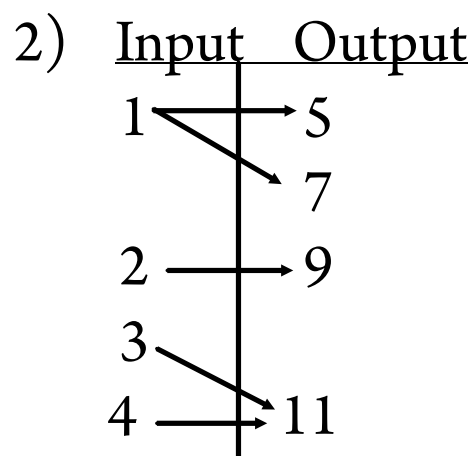
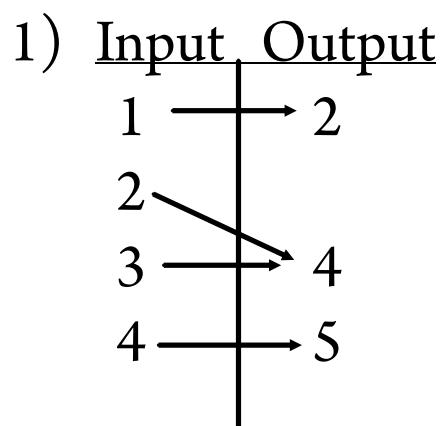
$y = 2x - 7$
 $g(x) = 2x - 7$

Vertical Line Test

Function Notation

Review!

Decide whether each relation is a function.



New!

Function Notation

$f(x)$ *DOES NOT* mean "f times x"!

→ "f of x"

Evaluating Functions

Ex. 1: Evaluate $f(x) = 10x + 3$ when $x = -2$

Ex. 2: Evaluate $g(x) = 7 - 3x$ when $x = 4$

$$f'(x) = 2x + 1$$

same $y = 2x + 1$

$$y = 5$$

x	$f'(x)$
2	5
0	1
-3	-5

$$f'(2) = 2 \cdot 2 + 1$$

$$f'(2) = 4 + 1$$

$$f'(2) = 5$$

$$f'(0) = 2 \cdot 0 + 1$$

$$f'(0) = 0 + 1$$

$$f'(0) = 1$$

$$f'(-3) = 2 \cdot (-3)$$

$$f'(-3) = -6 + 1$$

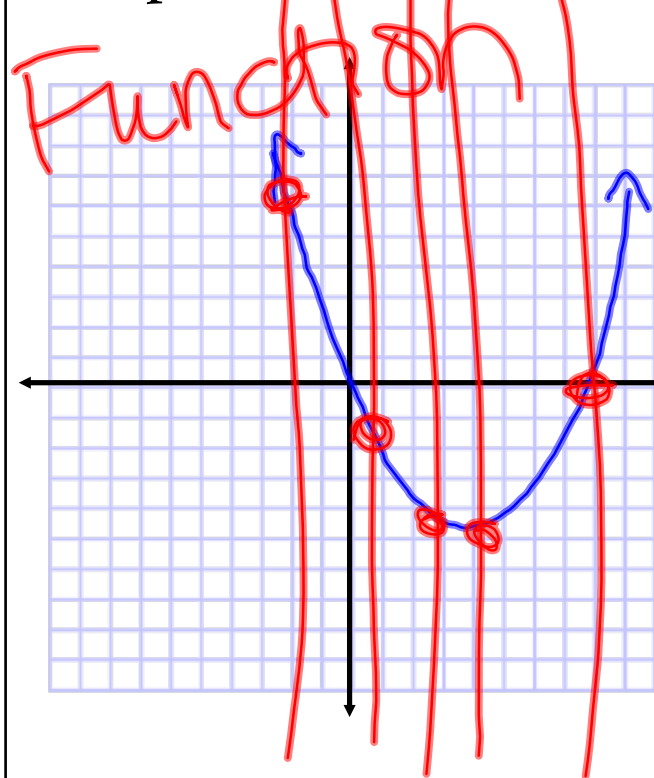
$$f'(-3) = -5$$

Vertical Line Test

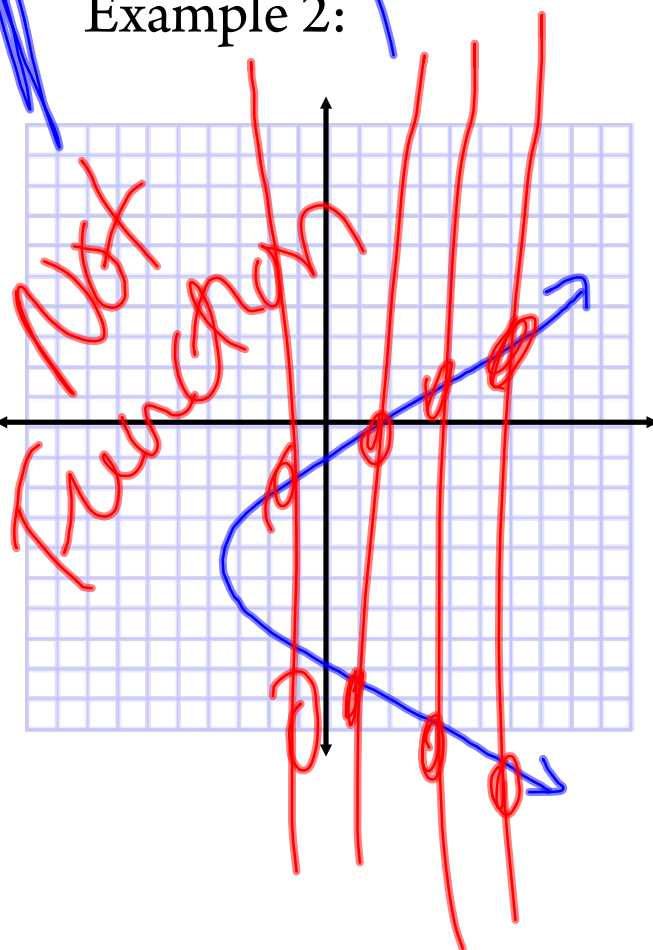
A relation is a function *if and only if* no vertical line passes through 2 or more points on the graph of the relation.

Check to see if these relations are functions using the Vertical Line Test.

Example 1:



Example 2:



Homework:

p.259-260: 11 - 19 all, 20 - 28 evens,
29 - 31 all